

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-002068**Date Inspected:** 31-Mar-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 1830**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 730**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Tower and OBG Fabrication**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. The QA Inspector observed the following:

CWI Inspector: Zhang Zhong

Orthotropic Box Girder (OBG) and Tower Fabrication:

Bay 1

The QA Inspector observed ZPMC personnel performing welding of deck panel DP432-001 closed ribs the QA Inspector observed the following submerged arc welding measurements:

Closed rib weld #1 welder Mr. Xu Guo Yin, stencil 59443 has a welding current of 685 amps and 25.0 volts;
closed rib weld #2 welder Mr. Han Chang Hou, stencil 59464 has a welding current of 680 amps and 25.0 volts;
closed rib weld #5 welder Mr. Song-Yen Shu, stencil 59421 has a welding current of 675 amps and 25.0 volts;
closed rib weld #6 welder Mr. Jiang Ting Guang, stencil 62265, has a welding current of 675 amps and 25.0 volts;
closed rib weld #9 welder Zhang Shao Hui, stencil 59403 has a welding current of 680 amps and 25.0 volts;
closed rib weld #10 welder Xiang Huan Feng, stencil 59416 has a welding current of 680 amps and 25.0 volts.

The ambient steel temperature is approximately 19°C and the welding travel speed is approximately 510 mm per minute. Items observed by the QA Inspector appear to comply with project specifications.

WELDING INSPECTION REPORT

(Continued Page 2 of 2)

The QA Inspector observed ZPMC welder Mr. Gong Zhi Wu, stencil 59405 is using welding procedure specification WPS-B-T-2133 to make a flux cored fillet weld on OBG deck plate closed rib stiffener plate weld DP328-001-118. The QA Inspector observed a welding current of approximately 220 amps and 25.0 volts. The QA Inspector observed Mr. Wu has a welding travel speed of approximately 165 mm per minute. The welding procedure specification states the maximum welding travel speed is 124 mm per minute and Mr. Wu appears to have an excessive welding travel speed. A review of QC Inspector Mr. Wang Xiang Pon welding document shows the QC welding data sheet lists Mr. Wu has a maximum welding travel speed of 120 mm per minute. The QA Inspector asked QC Inspector Mr. Pon and CWI Mr. Chen Xi to confirm the welding travel speed that is being used by Mr. Wu. Mr. Xi had ZPMC welder Mr. Wu make a practice fillet weld on a scrap of material to ascertain what welding travel speed was being used and after the weld was completed Mr. Xi said Mr. Wu is welding slightly above the maximum welding travel speed that is listed in the WPS. Prior to conducting a second weld on a scrap of plate, Mr. Xi had the welding machine current and voltage decreased to near the minimum levels as listed in the WPS. Mr. Wu then made a second practice weld and the welding travel speed was within an acceptable range as listed in the WPS. Later in the shift the QA Inspector observed Mr. Wu has a welding current of 200 amps, 23.9 volts and a welding travel speed of approximately 115 mm per minute, which complies with the travel speed that is listed in the welding procedure specification. See the photograph below for additional information.



Summary of Conversations:

See above for summary of conversations.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Patrick Lowey (858) 344-2712, who represents the Office of Structural Materials for your project.

Inspected By: Dawson,Paul

Quality Assurance Inspector

Reviewed By: Hager,Craig

QA Reviewer
